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Atty. Dkt.: Q95018

Preliminary Amendment

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A phosphor, comprising fluorescent substances I and II, wherein the fluorescent substance I contains silicate and Mn as an activator and the fluorescent substance II contains a compound represented by the formula (1) or a compound represented by the formula (2) and Tb as the activator-:

$$(M_{1-a}^1M_a^2)(Mg_{1-b-c}Zn_b)Al_{11-d}Mn_{c+d}O_{19-(a+d)/2}$$
 (1)

[In the wherein, in formula (1), M¹ is at least one-selected from the group consisting of La, Y, and Gd, and mixtures thereof,

M² is at least one selected from the group consisting of Ca, Sr, and Ba, and mixtures thereof, a is not less than 0 and not more than 0.6,

b is not less than 0 and not more than 1,

c is not less than 0 and not more than 0.5,

d is not less than 0 and not more than 0.5,

b+c is not more than 1, and

c+d is more than 0 and not more than 0.5.10.5,

$$(M_2^3O_3 \cdot mAl_2O_3 \cdot nB_2O_3)$$
 (2)

[In the wherein, in formula (2), M³ is at least one-selected from the group consisting of La, Y, and Gd, and mixtures thereof,

m is not less than 2.5 and not more than 4.5 and n is not less than 3.5 and not more than 5.5.

- 2. (original): The phosphor according to claim 1, wherein a ratio of the fluorescent substance I by weight and the fluorescent substance II by weight is 5/95 95/5.
- 3. (currently amended): The phosphor according to claim 1 or 2, wherein the fluorescent substance I is represented by the formula (3).

$$Zn_{2-e}Mn_eSiO_4$$
 (3)

[In the wherein, in formula (3), e is more than 0, preferably not less than 0.001 and not more than 0.3, preferably not more than 0.2.] and not more than 0.3.

4. (currently amended): The phosphor according to any of claims 1-3claim 1 or 2, wherein the fluorescent substance II is represented by the formula (4),

$$(M_{1-a}^1M_a^2)(Mg_{1-b-c}Zn_bMn_c)Al_{11}O_{19-(a/2)}$$
 (4)

[In the wherein, in formula (4), M¹ is at least one selected from the group consisting of La, Y, and Gd, and mixtures thereof,

M² is at least one selected from the group consisting of Ca, Sr, and Ba, and mixtures thereof, a is not less than 0 and not more than 0.6,

b is not less than 0 and not more than 1,

c is not less than 0 and not more than 0.5 and

b+c is not more than 1.}

5. (currently amended): The phosphor according to claim 4, wherein the fluorescent substance II is represented by the formula (5).

$$(La_{0.6}Ba_{0.4})(Mg_{1-b-c}Zn_bMn_c)Al_{11}O_{18.8}$$
 (5)

[In the wherein, in formula (5), b is not less than 0 and not more than 1, c is not less than 0 and not more than 0.5, and b+c is not more than 1.]

6. (currently amended): The phosphor according to any of claims 1-3claims 1 or 2, wherein the the fluorescent substance II is represented by the formula (6),

$$(M^{3}_{1-f}Tb_{f})Al_{3}(BO_{3})_{4}$$
 (6)

[In the wherein, in formula (6), M³ is at least one-selected from the group consisting of La, Y, and Gd, mixtures thereof, and

f is more than 0 and not more than 0.6.1

7. (currently amended): The phosphor according to claim 6, wherein the fluorescent substance II is represented by the formula (7).

$$(Y_{1-f-g}Gd_gTb_f)Al_3(BO_3)_4$$
 (7)

[In the wherein, in formula (7), f is more than 0 and not more than 0.6 and g is not less than 0 and not more than 1.]

8. (currently amended): A phosphor paste, comprising the a phosphor, according to any of claims 1-7, a solvent and a binder, wherein the phosphor comprises substances I and II, wherein the fluorescent substance I contains silicate and Mn as an activator and the fluorescent substance II contains a compound represented by the formula (1) or a compound represented by the formula (2) and Tb as the activator:

$$(M_{1-a}^{1}M_{a}^{2})(Mg_{1-b-c}Zn_{b})Al_{11-d}Mn_{c+d}O_{19-(a+d)/2}$$
 (1)

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wherein, in formula (1), M¹ is selected from the group consisting of La, Y, Gd, and mixtures thereof,

M² is selected from the group consisting of Ca, Sr, Ba, and mixtures thereof,

a is not less than 0 and not more than 0.6,

b is not less than 0 and not more than 1,

c is not less than 0 and not more than 0.5,

d is not less than 0 and not more than 0.5,

b+c is not more than 1, and

c+d is more than 0 and not more than 0.5,

 $\underline{M_2^3O_3 \cdot mAl_2O_3 \cdot nB_2O_3} \tag{2}$

wherein, in formula (2), M³ is selected from the group consisting of La, Y, Gd, and mixtures thereof,

m is not less than 2.5 and not more than 4.5 and

n is not less than 3.5 and not more than 5.5.

9. (currently amended): A vacuum ultraviolet excited light-emitting device comprising the a phosphor according to any of claims 1-7 and an electrode, wherein the phosphor comprises substances I and II, wherein the fluorescent substance I contains silicate and Mn as an activator and the fluorescent substance II contains a compound represented by the formula (1) or a compound represented by the formula (2) and Tb as the activator:

 $(M_{1-a}^1M_a^2)(Mg_{1-b-c}Zn_b)Al_{11-d}Mn_{c+d}O_{19-(a+d)/2}$ (1)

wherein, in formula (1), M¹ is selected from the group consisting of La, Y, Gd, and mixtures thereof,

M² is selected from the group consisting of Ca, Sr, Ba, and mixtures thereof,

a is not less than 0 and not more than 0.6,

b is not less than 0 and not more than 1,

c is not less than 0 and not more than 0.5,

d is not less than 0 and not more than 0.5,

b+c is not more than 1, and

c+d is more than 0 and not more than 0.5,

 $\underline{M_2^3O_3 \cdot mAl_2O_3 \cdot nB_2O_3} \tag{2}$

wherein, in formula (2), M³ is selected from the group consisting of La, Y, Gd, and mixtures thereof,

m is not less than 2.5 and not more than 4.5 and

n is not less than 3.5 and not more than 5.5.

- 10. (canceled).
- 11. (new): The phosphor according to claim 3, wherein e is not less than 0.001 and not more than 0.2.
- 12. (new): The phosphor according to claim 3, wherein the fluorescent substance II is represented by the formula (4),

$$(M_{1-a}^1M_a^2)(Mg_{1-b-c}Zn_bMn_c)Al_{11}O_{19-(a/2)}$$
 (4)

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wherein, in formula (4), M¹ is selected from the group consisting of La, Y, Gd, and mixtures thereof,

M² is selected from the group consisting of Ca, Sr, Ba, and mixtures thereof,

a is not less than 0 and not more than 0.6,

b is not less than 0 and not more than 1,

c is not less than 0 and not more than 0.5 and

b+c is not more than 1.

13. (new): The phosphor according to claim 12, wherein the fluorescent substance II is represented by the formula (5)

$$(La_{0.6}Ba_{0.4})(Mg_{1-b-c}Zn_bMn_c)Al_{11}O_{18.8}$$
 (5)

wherein, in formula (5), b is not less than 0 and not more than 1,

c is not less than 0 and not more than 0.5, and

b+c is not more than 1.

14. (new): The phosphor according to claim 3, wherein the fluorescent substance II is represented by the formula (6),

$$(M^{3}_{1-f}Tb_{f})Al_{3}(BO_{3})_{4}$$
 (6)

wherein, in formula (6), M³ is selected from the group consisting of La, Y, Gd, mixtures thereof, and

f is more than 0 and not more than 0.6.

15. (new): The phosphor according to claim 14, wherein the fluorescent substance II is represented by the formula (7)

$$(Y_{1-f-g}Gd_gTb_f)Al_3(BO_3)_4$$
 (7)

wherein, in formula (7), f is more than 0 and not more than 0.6 and g is not less than 0 and not more than 1.